

03 AUG 20 PM 11:12

RECEIVED

SEQUENCE LISTING

<110> Lowe, Robert S.
Jansen, Kathrin U.
Joyce, Joseph J.
McClements, William L.
Cook, James C. III
Ling, Jessica Ching-Yee
Neeper, Michael P.

<120> PROTEIN DELIVERY SYSTEM USING HUMAN
PAPILLOMAVIRUS VIRUS-LIKE PARTICLES

<130> 20276P

<140> 09/762,794

<141> 2001-02-09

<150> PCT/US99/17931

<151> 1999-08-10

<150> 60/096,638

<151> 1998-08-14

<160> 16

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 1

cttccccccg ggcacaaaac aaaatgc

27

<210> 2

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 2

ctcgagctcg cggccgctg taccgaccc

30

<210> 3

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 3

gcggccgcga gctcgagggt tatattcctg caaatacaa

39

<210> 4
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 4
 ccctccagat ctctaggcag ccaaagagac atctg 35

 <210> 5
 <211> 46
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 5
 tcccccgga gatctgccac catgcgacac aaacgttctg caaaac 46

 <210> 6
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 6
 ggcagccaaa gagacatctg 20

 <210> 7
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 7
 cagatgtctc tttggctgcc atggagccag tagatcctag ac 42

 <210> 8
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 8
 ctcgtaagat ctctattcct tcgggcctgt c 31

 <210> 9
 <211> 240
 <212> DNA
 <213> Human

 <400> 9

atgcgacaca	aacggttctgc	aaaacgcaca	aaacgtgcat	cggctaccca	actttataaa	60
acatgcaaac	aggcaggtac	atgtccacct	gacattatac	ctaagggtga	aggcaaaaact	120
attgctgata	aaatattaca	atatggaagt	atgggtgtat	tttttggtgg	gttaggaatt	180
ggaacagggg	cgggtacagg	cggacgcact	gggtatatcc	cattgggaac	aaggcctccc	240

<210> 10
 <211> 900
 <212> DNA
 <213> Human

<400> 10						
acagctacag	atacacttgc	tctgtgaaga	ccccctttaa	cagtagatcc	tgtggggcct	60
tctgatacct	ctatagtttc	tttagtggaa	gaaactagtt	ttattgatgc	tggtgcacca	120
acatctgtac	cttccatccc	cccagatgta	tcaggattta	gtattactac	ttcaactgat	180
accacacctg	ctatattaga	tattaataat	actgttacta	ctgttactac	acataataat	240
cccactttca	ctgacccatc	tgtattgcag	cctccaacac	ctgcagaaac	tggagggcat	300
tttacacttt	catcatccac	tattagtaca	cataattatg	aagaaattcc	tatggatata	360
tttattgtta	gcacaaaacc	taacacagta	actagtagca	caccataacc	agggctctcg	420
ccagtggcac	gcctaggatt	atatagtcgc	acaacacaa	aagttaaagt	tgtagaccct	480
gcttttgtta	ccactcccac	taaacttatt	acatatgata	atcctgcata	tgaagggtata	540
gatgtggata	atacattata	ttttcctagt	aatgataata	gtattaatat	agctccagat	600
cctgactttt	tggatatagt	tgtctttacat	aggccagcat	taacctctag	gcgtactggc	660
attaggtaca	gtagaattgg	taataaaca	acactacgta	ctcgtagtgg	aaaatctata	720
gggtgctaagg	tacattatta	ttatgatttg	agtactattg	atcctgcaga	agaaatagaa	780
ttacaaacta	taacaccttc	tacatatact	accacttcac	atgcagcctc	acctacttct	840
attaataatg	gcttatatga	tatttatgca	gatgacttta	ttacagatac	ttctacaacc	900

<210> 11
 <211> 282
 <212> DNA
 <213> Human

<400> 11						
ccggtacat	ctgtaccctc	tacatcttta	tcagggtata	ttcctgcaaa	tacaacaatt	60
ccttttggtg	gtgcatacaa	tattccttta	gtatcaggtc	ctgatatacc	cattaatat	120
actgaccaag	ctccttcatt	aattcctata	gttccagggt	ctccacaata	tacaattatt	180
gctgatgcag	gtgactttta	tttacatcct	agttattaca	tgttacgaaa	acgacgtaaa	240
cgtttaccat	atTTTTTTTc	agatgtctct	ttggctgcct	ag		282

<210> 12
 <211> 465
 <212> DNA
 <213> Human

<400> 12						
atgcgacaca	aacggttctgc	aaaacgcaca	aaacgtgcat	cggctaccca	actttataaa	60
acatgcaaac	aggcaggtac	atgtccacct	gacattatac	ctaagggtga	aggcaaaaact	120
attgctgata	aaatattaca	atatggaagt	atgggtgtat	tttttggtgg	gttaggaatt	180
ggaacagggg	cgggtacagg	cggccgcgag	ctcgagggtt	atattcctgc	aaatacaaca	240
attccttttg	gtgggtgcata	caataattcct	ttagtatcag	gtcctgatat	accattaat	300
ataactgacc	aagctccttc	attaattcct	atagttccag	gggtctccaca	atatacaatt	360
attgctgatg	cagggtgactt	ttattttacat	cctagttatt	acatgtttacg	aaaacgacgt	420
aaacggtttac	catatTTTTT	ttcagatgtc	tctttggctg	cctag		465

<210> 13
 <211> 154
 <212> PRT
 <213> Human

<400> 13

```

Met Arg His Lys Arg Ser Ala Lys Arg Thr Lys Arg Ala Ser Ala Thr
 1           5           10           15
Gln Leu Tyr Lys Thr Cys Lys Gln Ala Gly Thr Cys Pro Pro Asp Ile
          20           25           30
Ile Pro Lys Val Glu Gly Lys Thr Ile Ala Asp Gln Ile Leu Gln Tyr
          35           40           45
Gly Ser Met Gly Val Phe Phe Gly Gly Leu Gly Ile Gly Thr Gly Ser
          50           55           60
Gly Thr Gly Gly Arg Glu Leu Glu Gly Tyr Ile Pro Ala Asn Thr Thr
65          70           75           80
Ile Pro Phe Gly Gly Ala Tyr Asn Ile Pro Leu Val Ser Gly Pro Asp
          85           90           95
Ile Pro Ile Asn Ile Thr Asp Gln Ala Pro Ser Leu Ile Pro Ile Val
          100          105          110
Pro Gly Ser Pro Gln Tyr Thr Ile Ile Ala Asp Ala Gly Asp Phe Tyr
          115          120          125
Leu His Pro Ser Tyr Tyr Met Leu Arg Lys Arg Arg Lys Arg Leu Pro
          130          135          140
Tyr Phe Phe Ser Asp Val Ser Leu Ala Ala
145          150

```

```

<210> 14
<211> 30
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> PCR Primer

```

```

<400> 14
cccagcccat gtccgccggc gctcgagctc

```

30

```

<210> 15
<211> 40
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> PCR Primer

```

```

<400> 15
gcggccgcga gctcgagggt tatattcctg caaatacaac

```

40

```

<210> 16
<211> 35
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> PCR Primer

```

```

<400> 16
gtctacagag aaaccgacgg atctctagac ctccc

```

35